

Coast Erosion of the Coal Measures in the Sydney Coalfield, Cape Breton

By the Editor.

In a Bulletin on the coalfields of Eastern Canada, prepared by the writer for the Department of Mines, Ottawa in 1916, two photographs were re-produced showing the effect of the sea and the elements upon a sandstone spur that lies between the crops of the Hub and Harbor Seams, not far from the Harbor of Glace Bay. By the courtesy of Mr. B. A. L. Huntsman, of Sydney, an amateur photographer of much skill, the writer has been able to obtain a chronological series of later views of this spur that show the rapidity with which coast erosion proceeds on the exposed Coal Measures of the Sydney Field. The series is of sufficient interest to justify re-publication of the two original photographs with those that have been taken at later dates, the whole extending over a period of twenty years. For the original photograph of 1900, the writer is indebted to Mr. Stuart MacCawley of Glace Bay.

By the courtesy of Mr. C. M. Odell, the following view of the disintegrating and wasting Coal Measure sandstones and shales is reproduced from a photograph taken near Point Aconi in 1908 (on the North Sydney side of the coalfield) and originally published in a description of the operations of the Dominion Coal Company by the writer that appeared in serial form in the "Canadian Mining Journal" in 1908. In this view it will be seen that the overhanging marls have been undermined by wave action, much as a miner undermines the coal seams, and eventually the whole face of the cliff will slide into the sea.



The isolated sandstone spur, the completed work of erosion, shown in the following photograph, is to be seen near Indian Head, between New Waterford and Glace Bay.



Isolated Sandstone Spur at Indian Head, Sydney Coalfield, Cape Breton.

Another view of a sandstone spur is given, which is in the Waterford District of the Sydney Field. The spur is undergoing the same process of destruction that is illustrated by the Glace Bay series. This photograph was taken by Mr. Odell.

It is certain that a large portion of the undersea coal seams—probably nearly all the workable portion—is overlain by waters of the sea that have steadily encroached upon the land by the unceasing wave erosion along the shore line of Cape Breton. The ancient shore line can be detected by soundings at varying distances from the existing coast-line, and the intervening ocean floor has undoubtedly been gained from the land in modern geological time. The late Richard Brown, from observations extending over thirty years, estimated the wastage of the coast at about five inches a year, but the photographs will demonstrate, it is probably much more rapid in exposed spots. The shales and sandstones, because of their parallel bedding, and their seaward inclination, easily slide into the sea when loosened by the winter frosts. In the Spring, under the combined action of the thaw, the scour of the drift-ice and the frequent storms, the cliffs waste very rapidly.